

In the Claims:

Kindly amend the claims as follows:

1. (CURRENTLY AMENDED) A particle sensor comprising:

a light detection device;

a housing in communication with said light detection device; and

a first concave reflective surface on said housing;

wherein said reflective surface has a first focal point and a second focal point defining a first axis of symmetry;

a second reflective surface having a concave ellipsoidal shape;

wherein said second reflective surface has a first focal point and a second focal point defining a second axis of symmetry; and

a means for conducting a gas stream with small particles through the said first focal point of said second reflective surface; and

a means for projecting light through the said first focal point of said second reflective surface.

2. (PREVIOUSLY PRESENTED) The device of claim 1 wherein said light detection device is circumscribed by said housing.

3. (PREVIOUSLY PRESENTED) The device of claim 1 wherein said light detection device is a photodiode.

4. (PREVIOUSLY PRESENTED) The device of claim 1 wherein said reflective surface is gold.

5. (PREVIOUSLY PRESENTED) The device of claim 1 wherein said light detection device is recessed below said concave reflective surface.
6. (PREVIOUSLY PRESENTED) The device of claim 1 wherein said light detection device is raised above said first concave reflective surface.
7. (PREVIOUSLY PRESENTED) The device of claim 1 wherein said light detection device forms the center of said concave reflective surface.
8. (PREVIOUSLY PRESENTED) The device of claim 1 wherein said reflective surface has a first focal point and a second focal point defining a first axis of symmetry.
9. (PREVIOUSLY PRESENTED) The device of claim 8 wherein said light detection device is located in the center of said first axis of symmetry.
10. (PREVIOUSLY PRESENTED) The device of claim 8 further comprising:
a second reflective surface having a concave ellipsoidal shape;
wherein said second reflective surface has a first focal point and a second focal point defining a second axis of symmetry;
wherein said first symmetry of axis and said second axis of symmetry are coaxial.
11. (PREVIOUSLY PRESENTED) The device of claim 10 further comprising:
a means for conducting a gas stream with small particles through the said first focal point of said second reflective surface; and,
a means for projecting light through the said first focal point of said second reflective surface.
12. (CANCELED)
13. (CURRENTLY AMENDED) The device of claim 12 further comprising;

a first reflective surface having a concave shape;
wherein said first reflective surface has a first focal point and a second focal point
defining a first axis of symmetry;
a second reflective surface having a concave ellipsoidal shape;
wherein said second reflective surface has a first focal point and a second focal point
defining a second axis of symmetry; and,
wherein said first symmetry of axis and said second axis of symmetry are coaxial;
a means for conducting a gas stream with small particles through the said first focal point
of said second reflective surface; and,
a means for projecting light through the said first focal point of said second reflective
surface.

14. (PREVIOUSLY PRESENTED) The device of claim 13 wherein said second
focal point of said second reflective surface is located on said first reflective
surface at said first axis of symmetry.

15. (PREVIOUSLY PRESENTED) The device of claim 13 wherein said first focal
point of said first mirror is coincident with said first focal point of said second
mirror.

16. (PREVIOUSLY PRESENTED) The device of claim 13 wherein said second
focal point of said first mirror is coincident with said second reflecting surface at
said first axis of symmetry.

17. (PREVIOUSLY PRESENTED) The device of claim 13 wherein said means for
detecting light is located on said first mirror coincident with said first axis of
symmetry.

18. (PREVIOUSLY PRESENTED) The device of claim 13 further comprising:
a light detection device in communication with said first reflective surface;
wherein said first reflective surface is spherical;
wherein said light detection device is centered on said first axis of symmetry;
wherein the radius of curvature for said first reflective surface is equal to the distance
between said light detection device at said first axis of symmetry and said first focal point
of said second reflective surface.

19. (CURRENTLY AMENDED) The device of claim 1 further comprising:
a second concave spherical reflective surface with a second principal axis;
wherein said first concave reflective surface is spherical with a first principal axis;
wherein said first principal axis and said second principal axis are co-axial;
a means for conducting a gas stream with small particles through the said second
principal axis of said second reflective surface;
a means for projecting light through the said second principal axis of said second
reflective surface intersecting said gas stream with small particles defining a first
intersection point;
wherein the said second concave reflective surface's image location of said first
intersection point is at the center of said light detection device; and,
wherein the said first concave reflective surface's radius of curvature is equal to the
distance between said first intersection point and said first concave reflective surface
where it intersects with said first principal axis.

20. (PREVIOUSLY PRESENTED) The device of claim 1 further comprising:

a second reflective surface having a concave shape configured to reflect light opposite said first concave reflective surface.